



PREPARED FOR
WISCONSIN DEPARTMENT
OF NATURAL RESOURCES

WDNR - FOX RIVER
DETAILED EVALUATION
OF ALTERNATIVES REPORT -

SUPPLEMENT IV - ENGINEERING
CONCEPT DRAWINGS

WISC1-15933-121

PREPARED BY
THE RETEC GROUP, INC.
MAY 2003

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WDNR - FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

TITLE SHEET

CURRENT DATE 06/26/03

SHEET 01

REVISION C



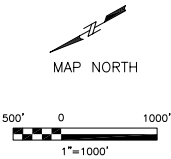
I.D.	PROPERTY	OWNERSHIP	APPROX. SIZE, ACRES	POSSIBLE PROJECT USES	
				ACCESS OR STORAGE	DEWATERING/ SEDIMENT TRANSFER
(A)	BERGSTROM FILL (ARROWHEAD)	CITY OF NEENAH	19	●	●
(B)	VACANT LAND	PRIVATE	15	●	

LEGEND

- EDGE OF WATER
- APPROX. CENTER OF OU, WITH MILE MARKERS (LENGTH ALSO REPRESENTS MAXIMUM RUN OF IN-WATER DREDGE SLURRY PIPE, IF USED)
- (A) LOCATION OF PROPERTIES WHICH MAY HAVE POTENTIAL FOR USE DURING PROJECT IMPLEMENTATION

NOTES

- BASE MAP IS WISCONSIN TRANSVERSE MERCATOR, NAD 83.
- PROPERTIES IDENTIFIED ARE FOR INFORMATIONAL PURPOSES ONLY, SHOWING THE RANGE OF TYPICAL SITES ALONG THE RIVER. ACTUAL AVAILABILITY HAS NOT YET BEEN DETERMINED. SOME MAY NOT BE SUITABLE OR AVAILABLE FOR USE.
- BRIDGE IS ABANDONED, BUT DESIGNATED FOR FUTURE USE WORK AS PART OF A RECREATIONAL TRAIL, DURING REMEDIAL WORK A SECTION SHOULD BE RAISED OR REMOVED TO ALLOW IN-WATER EQUIPMENT TO PASS UNDER (DREDGES, BARGES, ETC.)



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SRT	06/26/03	FMS	06/26/03
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CHKD	DATE	APPVD	DATE

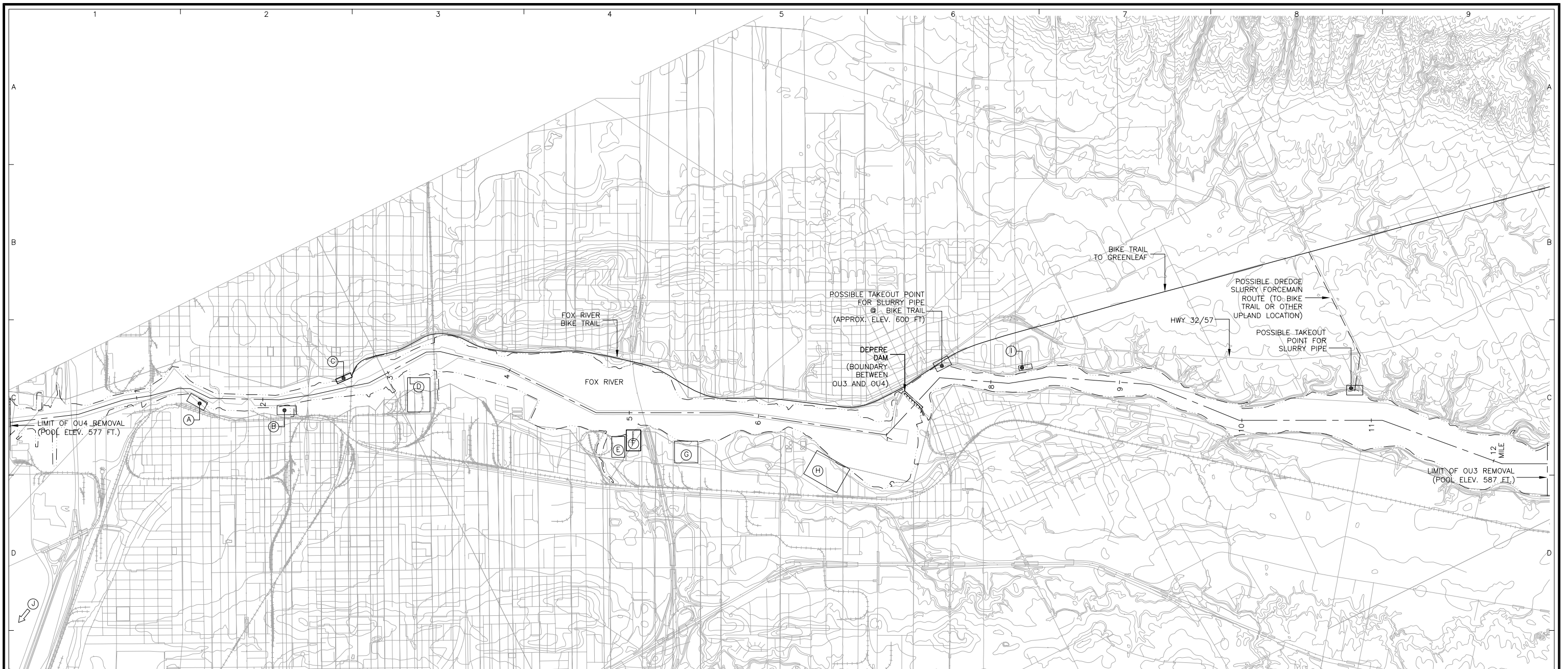
WDNR-FOX RIVER
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CURRENT DATE 06/26/03

FACILITIES LOCATOR PLAN - OU1

SHEET 02

REVISION C



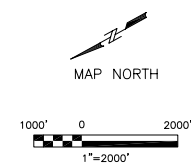
I.D.	PROPERTY	OWNERSHIP	APPROX. SIZE, ACRES	POSSIBLE PROJECT USES	
				ACCESS OR STORAGE ONLY	DEWATERING PLANT/SEDIMENT TRANSFER
(A)	LEICHT NORTH DOCK	PRIVATE	10+	●	
(B)	FORMER INDUSTRIAL LAND	CITY OF GREEN BAY	20	●	●
(C)	BROGAN PROPERTY	IN TRUST FOR PUBLIC USE	3 – 4	●	
(D)	FORMER SHELL PROPERTY	PRIVATE	20 – 25	●	●
(E)	VACANT LAND	PRIVATE	10	●	●
(F)	FORMER LAKESIDE MARINA	VILLAGE OF ASHWAUBENON	10	●	●
(G)	VACANT LAND	VILLAGE OF ASHWAUBENON	22	●	●
(H)	BROWN CO. FAIRGROUNDS	BROWN COUNTY	N.A.	●	
(I)	BROGAN PROPERTY	IN TRUST FOR PUBLIC USE	3	●	
(J)	BAYPORT	BROWN COUNTY	N.A.	●	●

LEGEND

- +--- EDGE OF WATER
- +--- APPROX. CENTER OF OU, WITH MILE MARKERS
(LENGTH ALSO REPRESENTS MAXIMUM RUN
OF IN-WATER DREDGE SLURRY PIPE, IF USED.)
- (A) LOCATION OF PROPERTIES WHICH MAY HAVE
POTENTIAL FOR USE DURING PROJECT
IMPLEMENTATION

NOTES

1. BASE MAP IS WISCONSIN TRANSVERSE MERCATOR, NAD 83.
2. PROPERTIES IDENTIFIED ARE FOR INFORMATIONAL PURPOSES ONLY, SHOWING THE RANGE OF TYPICAL SITES ALONG THE RIVER. ACTUAL AVAILABILITY HAS NOT YET BEEN DETERMINED. SOME MAY NOT BE SUITABLE OR AVAILABLE FOR USE.
3. FOX RIVER BIKE TRAIL IS SHOWN FOR INFORMATIONAL PURPOSES ONLY. NO COMMITMENT HAS BEEN MADE TO USE THIS FACILITY AS PART OF THE PROJECT.



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WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

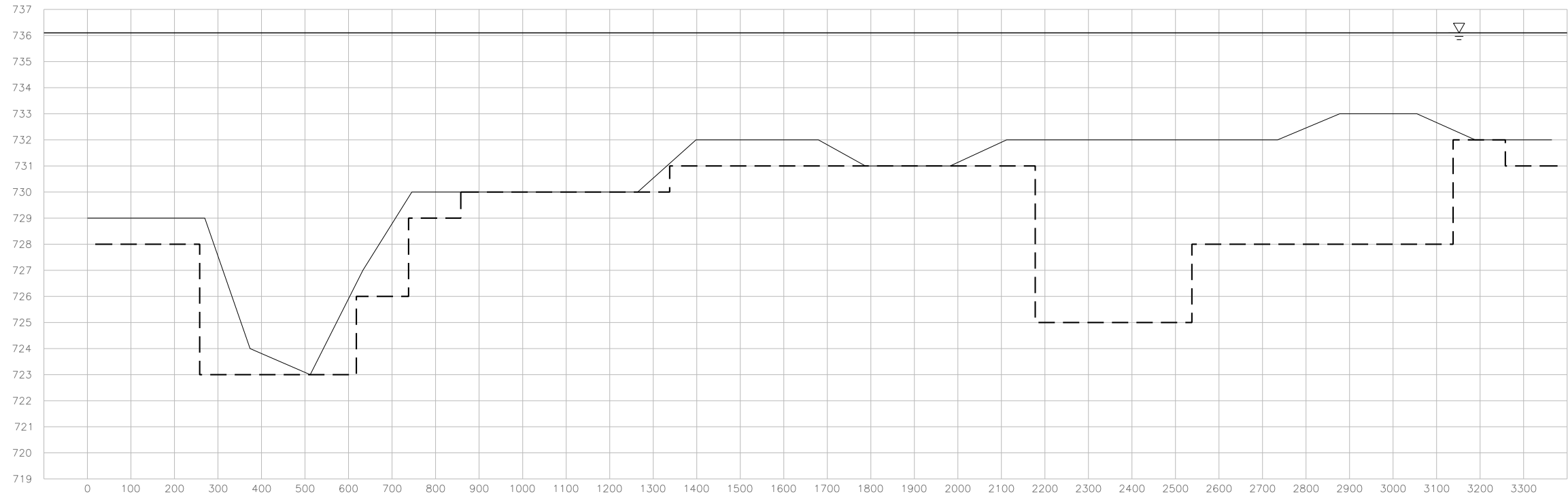
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FACILITIES LOCATOR PLAN - OU3 and OU4

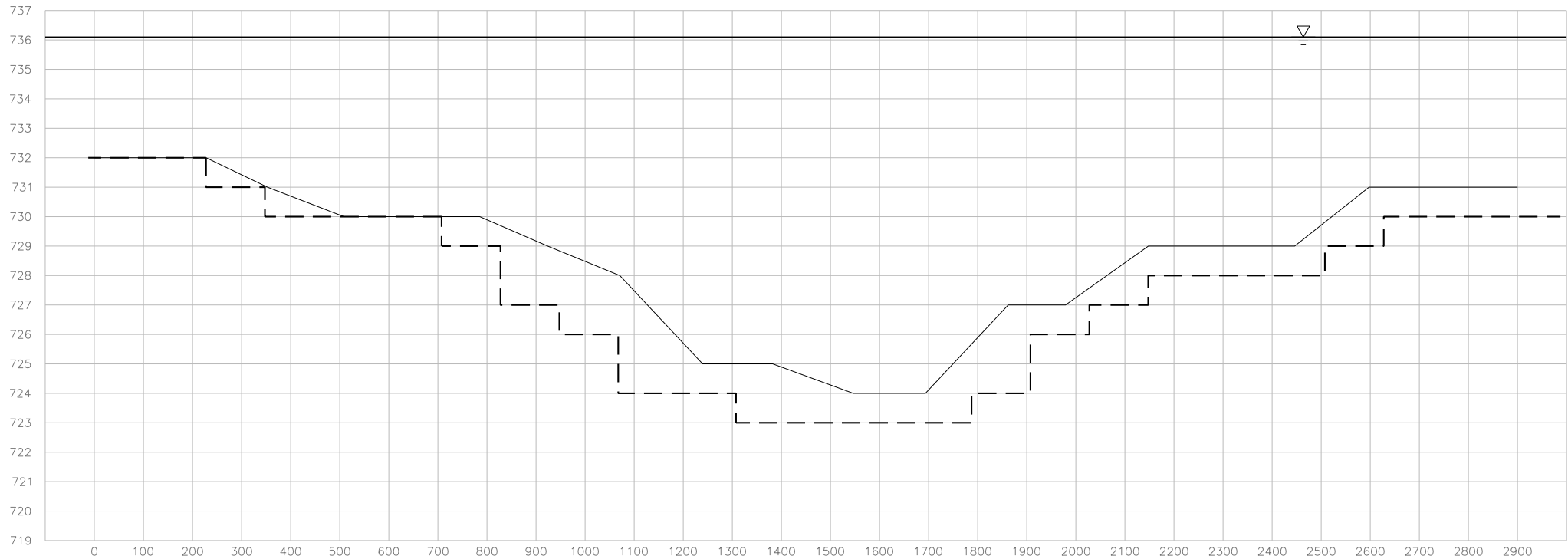
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REVISION C

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SECTION AT MILE MARKER 1
VIEW LOOKING DOWN RIVER



SECTION AT MILE MARKER 2
VIEW LOOKING DOWN RIVER

LINE LEGEND

- RIVER ELEVATION
- BED ELEVATION
- DREDGE ELEVATION (TYPICAL)

NOTES

- DREDGE SECTIONS BASED ON USING HYDRAULIC DREDGE EQUIPMENT FOR SEDIMENT REMOVAL AS SPECIFIED IN DEA REPORT.
- BED ELEVATION IS THE SAME AS MUD LINE ELEVATION WHICH IS THE ELEVATION AT THE INTERFACE OF SURFACE WATER AND NATIVE SEDIMENTS.
- DREDGE ELEVATION IS THE ELEVATION TO WHICH SEDIMENTS ARE REMOVED BASED ON DMU ANALYSIS AND HYDRAULIC DREDGE EQUIPMENT. DREDGE ELEVATION DOES NOT INCLUDE OVERDREDGE FACTOR.
- ALL ELEVATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE UPON COMPLETION OF PRE-DESIGN SAMPLING.

75' 0 150'
HORIZONTAL SCALE: 1"=150'

1.25' 0 2.5'
VERTICAL SCALE: 1"=2.5'



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WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

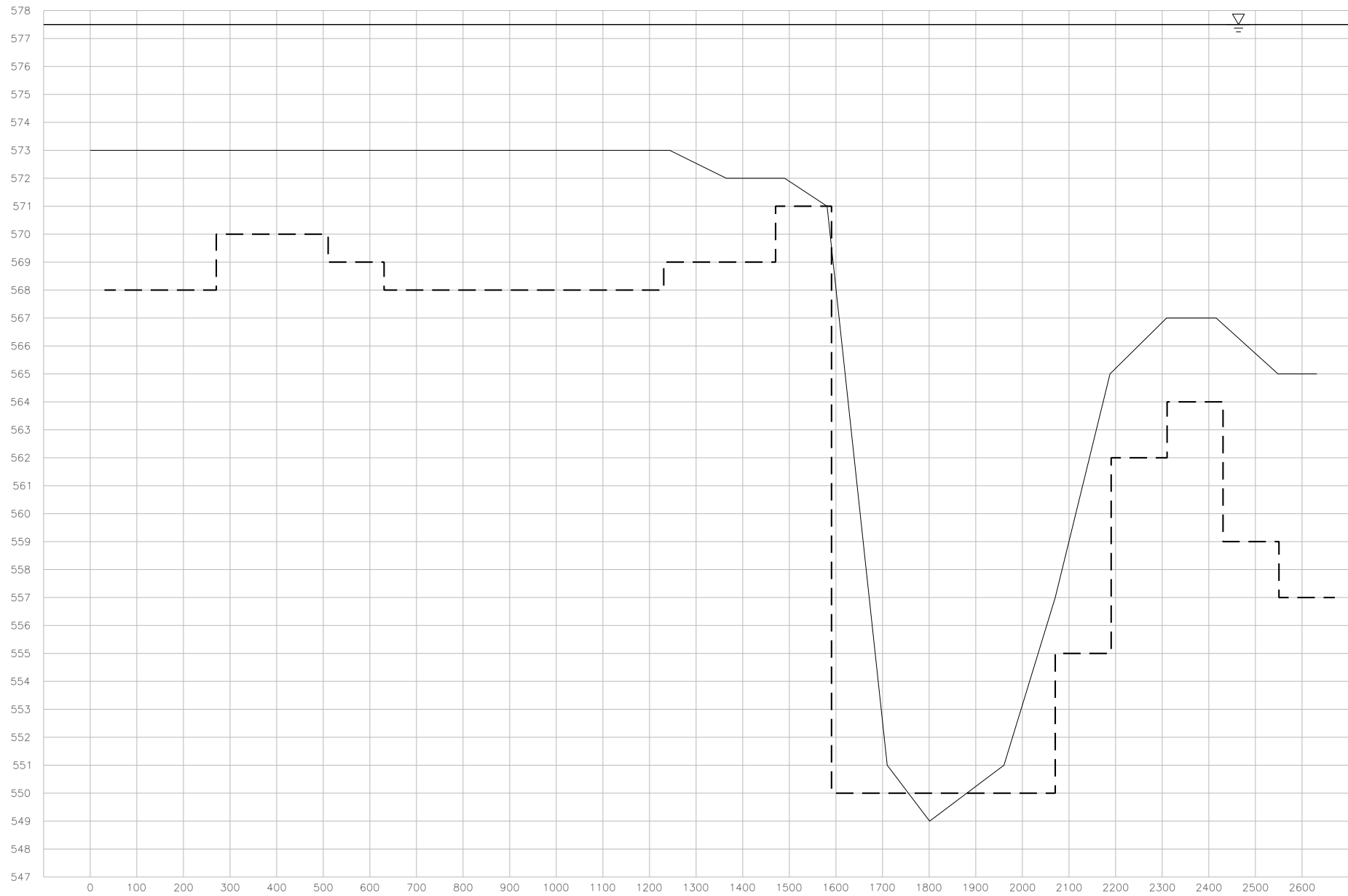
CURRENT DATE 06/26/03

DREDGE SECTIONS - OU1

SHEET 04

REVISION C

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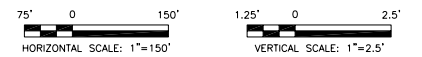
SECTION AT MILE MARKER 7
VIEW LOOKING DOWN RIVER

LINE LEGEND

- ▽— RIVER ELEVATION
——— BED ELEVATION
- - - DREDGE ELEVATION (TYPICAL)

NOTES

- DREDGE SECTIONS BASED ON USING HYDRAULIC DREDGE EQUIPMENT FOR SEDIMENT REMOVAL AS SPECIFIED IN DEA REPORT.
- BED ELEVATION IS THE SAME AS MUD LINE ELEVATION WHICH IS THE ELEVATION AT THE INTERFACE OF SURFACE WATER AND NATIVE SEDIMENTS.
- DREDGE ELEVATION IS THE ELEVATION TO WHICH SEDIMENTS ARE REMOVED BASED ON DMU ANALYSIS AND HYDRAULIC DREDGE EQUIPMENT. DREDGE ELEVATION DOES NOT INCLUDE OVERDREDGE FACTOR.
- ALL ELEVATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE UPON COMPLETION OF PRE-DESIGN SAMPLING.



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A	FMS	04/25/03	DRAFT FOR INTERNAL/CLIENT REVIEW	FMS	04/25/03		
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WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

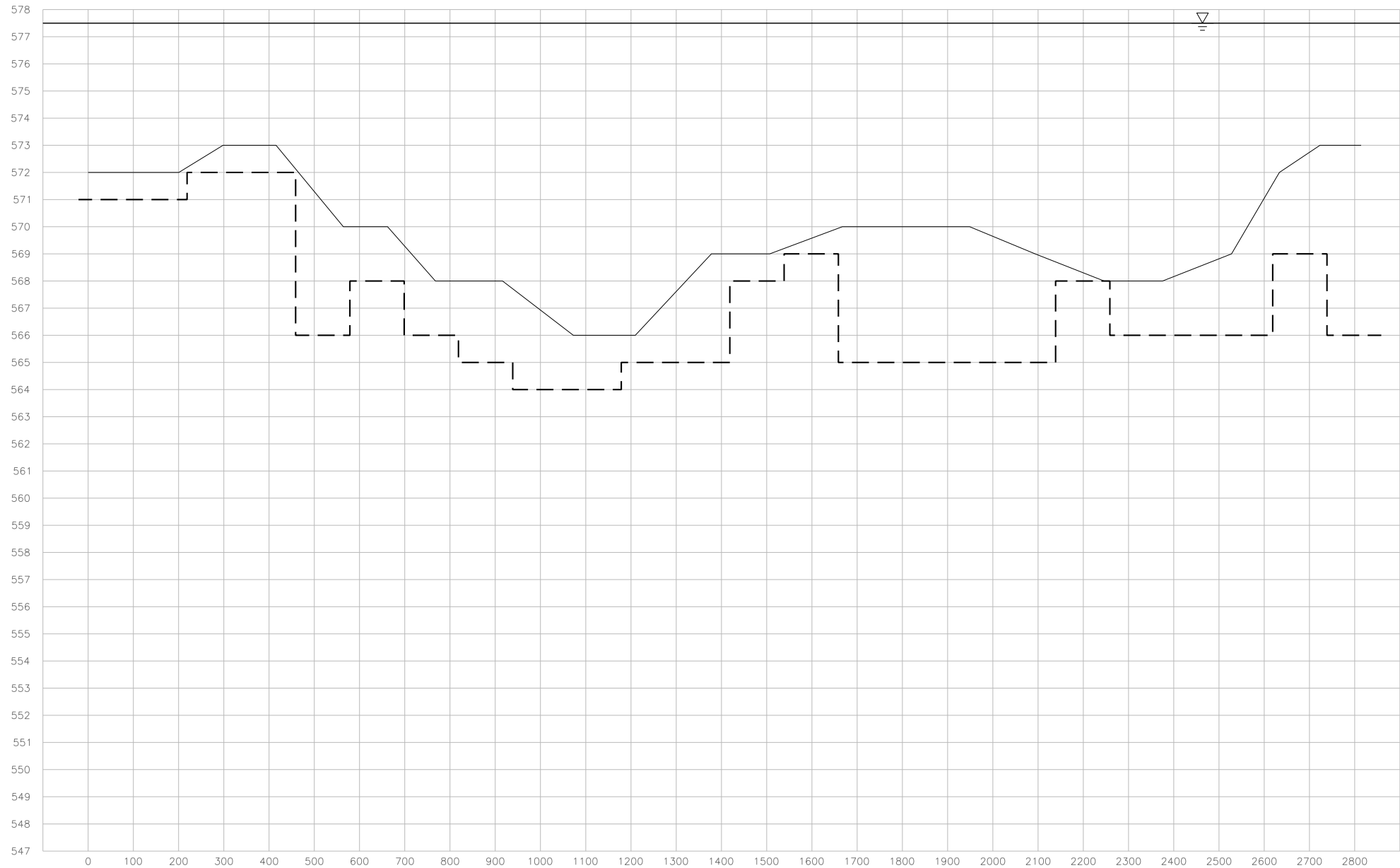
CURRENT DATE 06/26/03

DREDGE SECTION - OU4

SHEET 06

REVISION C

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SECTION AT MILE MARKER 5
VIEW LOOKING DOWN RIVER

LINE LEGEND

- ▽— RIVER ELEVATION
——— BED ELEVATION
- - - DREDGE ELEVATION (TYPICAL)

NOTES

- DREDGE SECTIONS BASED ON USING HYDRAULIC DREDGE EQUIPMENT FOR SEDIMENT REMOVAL AS SPECIFIED IN DEA REPORT.
- BED ELEVATION IS THE SAME AS MUD LINE ELEVATION WHICH IS THE ELEVATION AT THE INTERFACE OF SURFACE WATER AND NATIVE SEDIMENTS.
- DREDGE ELEVATION IS THE ELEVATION TO WHICH SEDIMENTS ARE REMOVED BASED ON DMU ANALYSIS AND HYDRAULIC DREDGE EQUIPMENT. DREDGE ELEVATION DOES NOT INCLUDE OVERDREDGE FACTOR.
- ALL ELEVATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE UPON COMPLETION OF PRE-DESIGN SAMPLING.

75' 0 150'
HORIZONTAL SCALE: 1"=150'

1.25' 0 2.5'
VERTICAL SCALE: 1"=2.5'



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WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

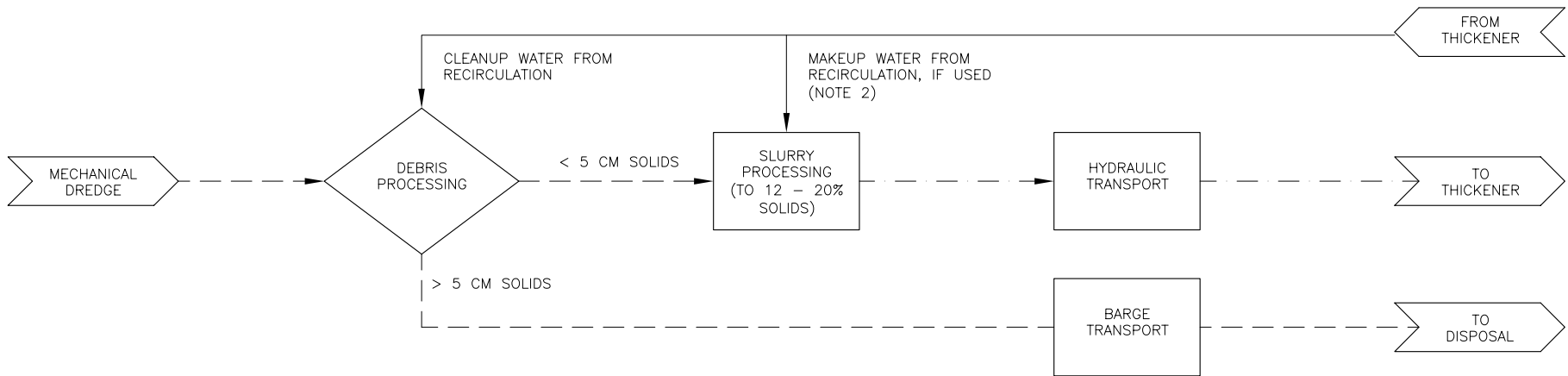
CURRENT DATE 06/26/03

DREDGE SECTION - OU4 (CONTINUED)

SHEET 07

REVISION C

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LINE LEGEND

—————	WATER OR DILUTE AQUEOUS STREAM
- - - - -	HIGH SOLIDS OR SOLIDS RECYCLE (PUMPABLE)
- - - - -	SOLID MATERIAL

- NOTES**
- THIS BLOCK DIAGRAM ILLUSTRATES THE TYPICAL PROCESSING PROVIDED BY A HYBRID DREDGING OPERATION (BEAN, 2002.) CERTAIN PROCESS COMBINATIONS AND EQUIPMENT ARE PROPRIETARY AND PROTECTED BY PATENT.
 - RECIRCULATION OF WATER MAY BE OPTIONAL. IF RECIRCULATION NOT USED, MAKEUP AND CLEANUP WATER WOULD COME FROM THE RIVER.

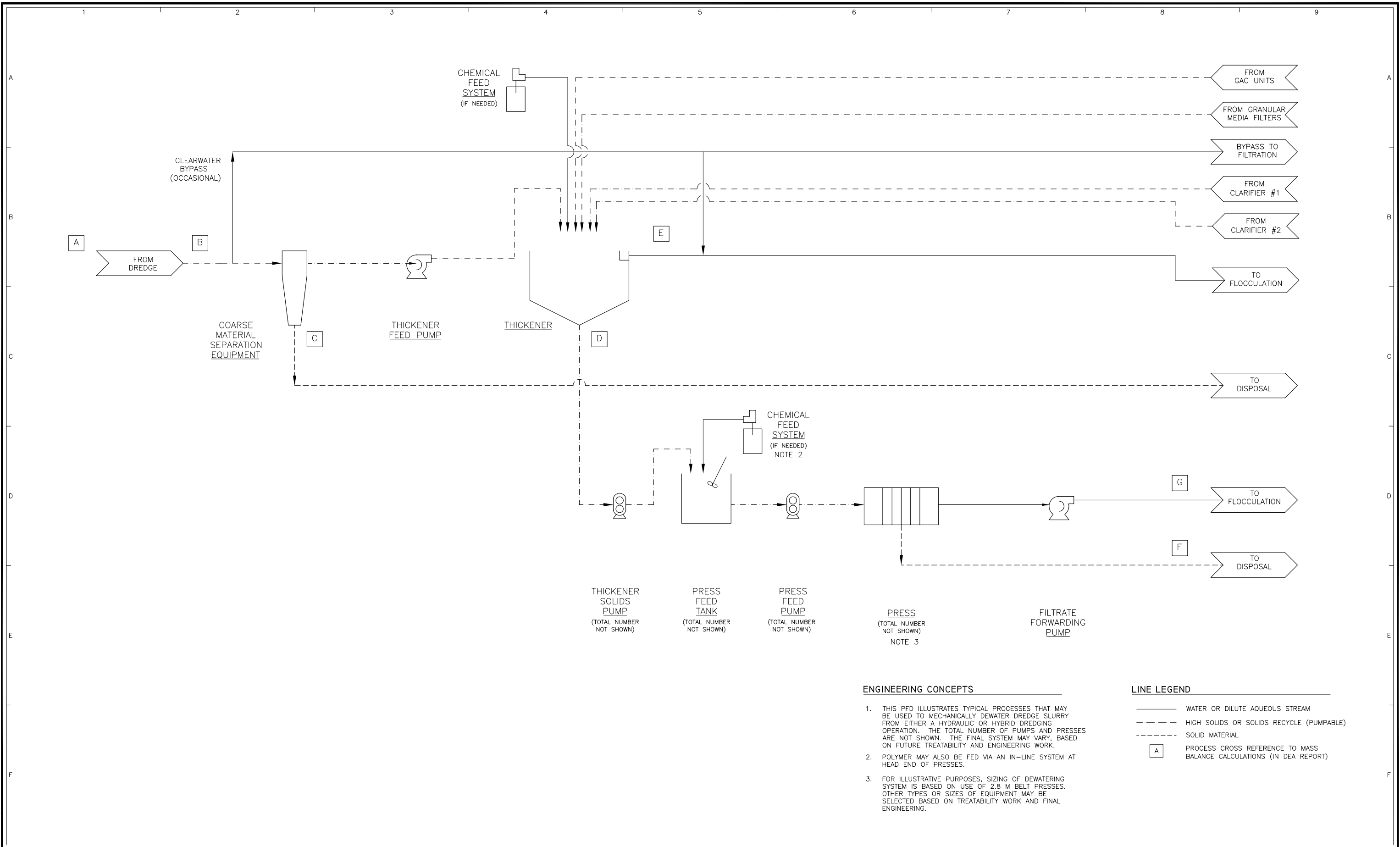


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NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE		

WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
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BLOCK DIAGRAM-
HYBRID DREDGING

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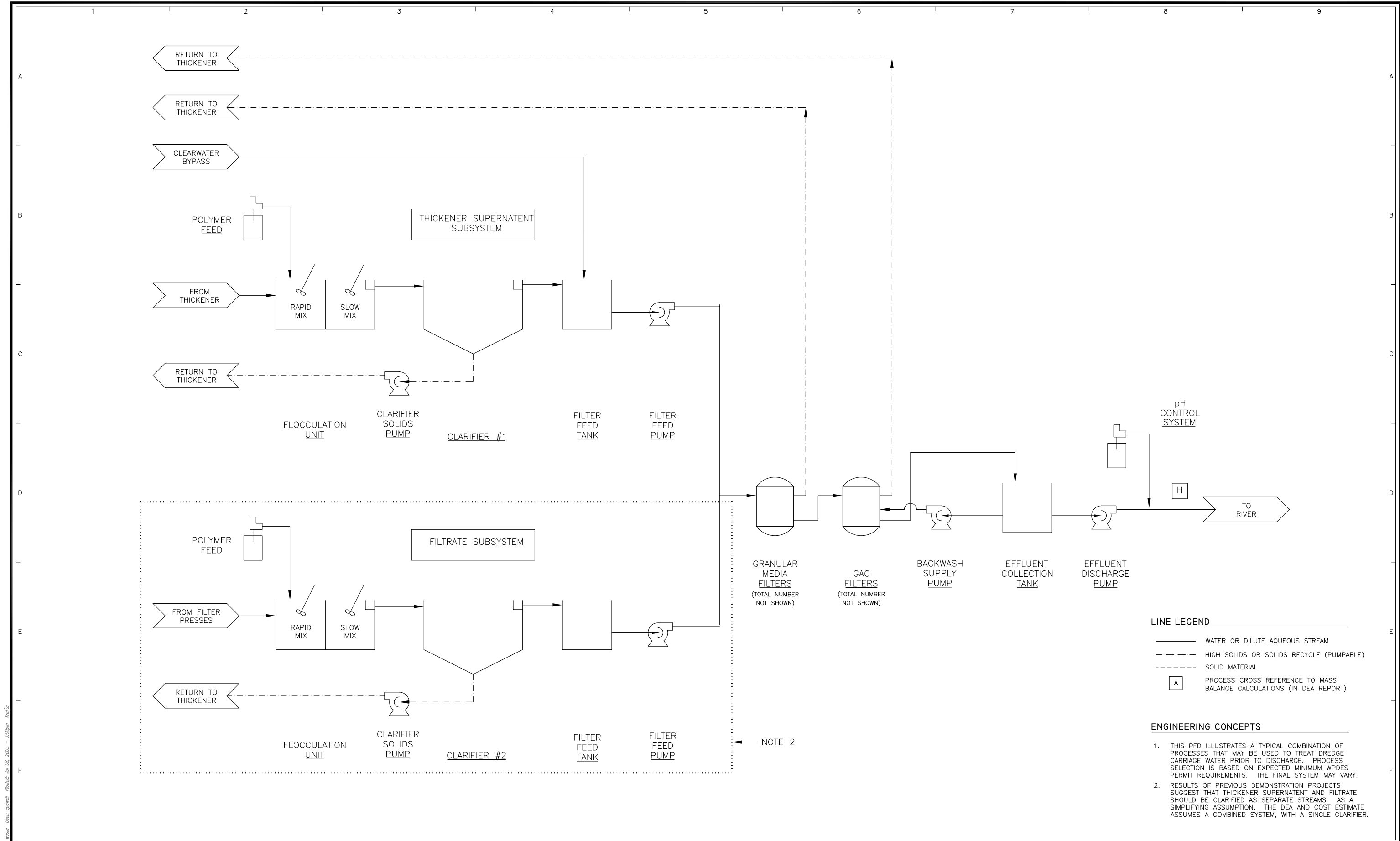
WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
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CURRENT DATE 06/26/03

PROCESS FLOW DIAGRAM - SOLIDS
DEWATERING (MECHANICAL)

SHEET 09

REVISION C



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B	COP	03/05/03	2nd IN-HOUSE REVIEW				
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NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE

WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

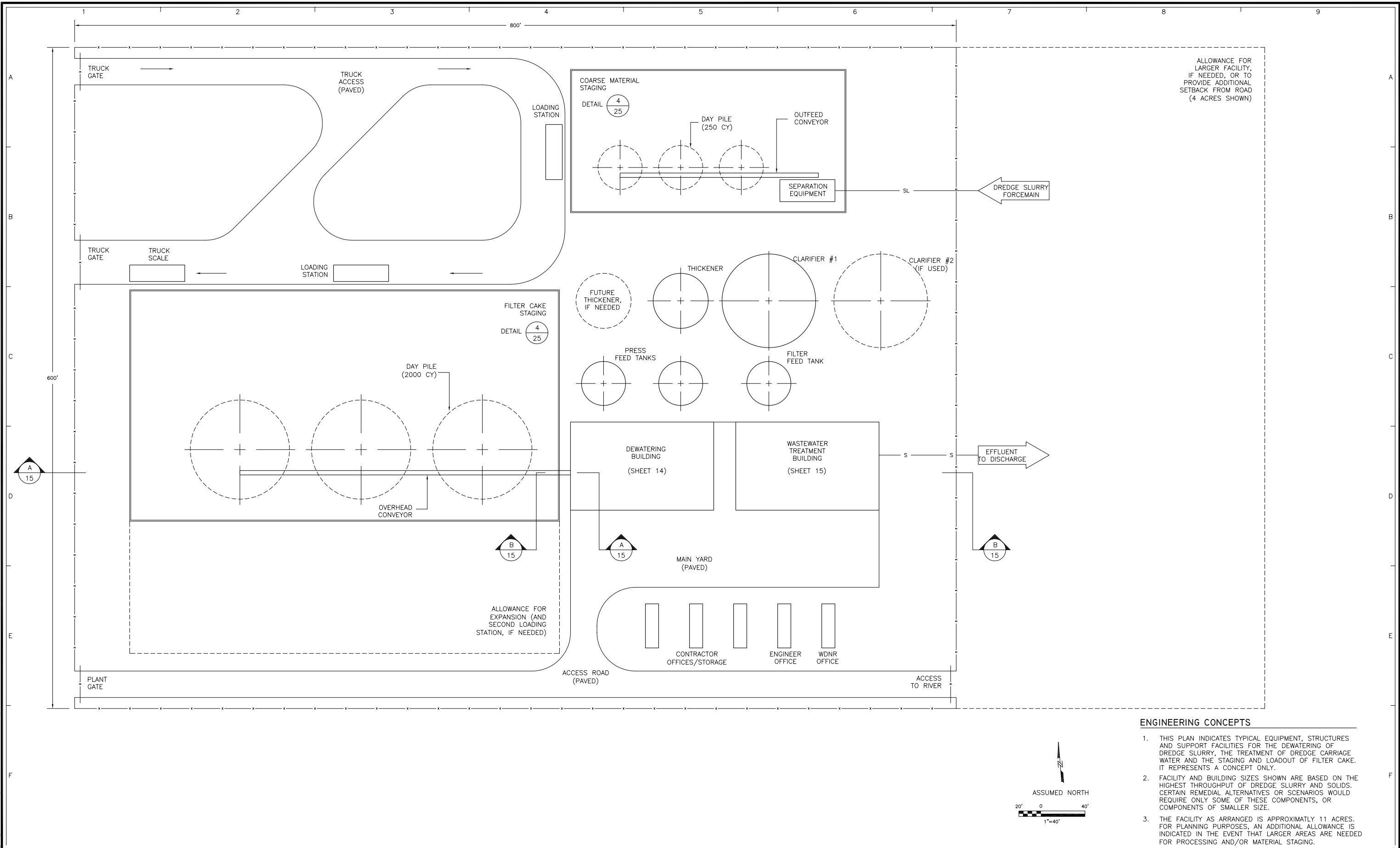
PROCESS FLOW DIAGRAM -
WASTEWATER TREATMENT

CURRENT DATE 06/26/03

SHEET 10

REVISION C

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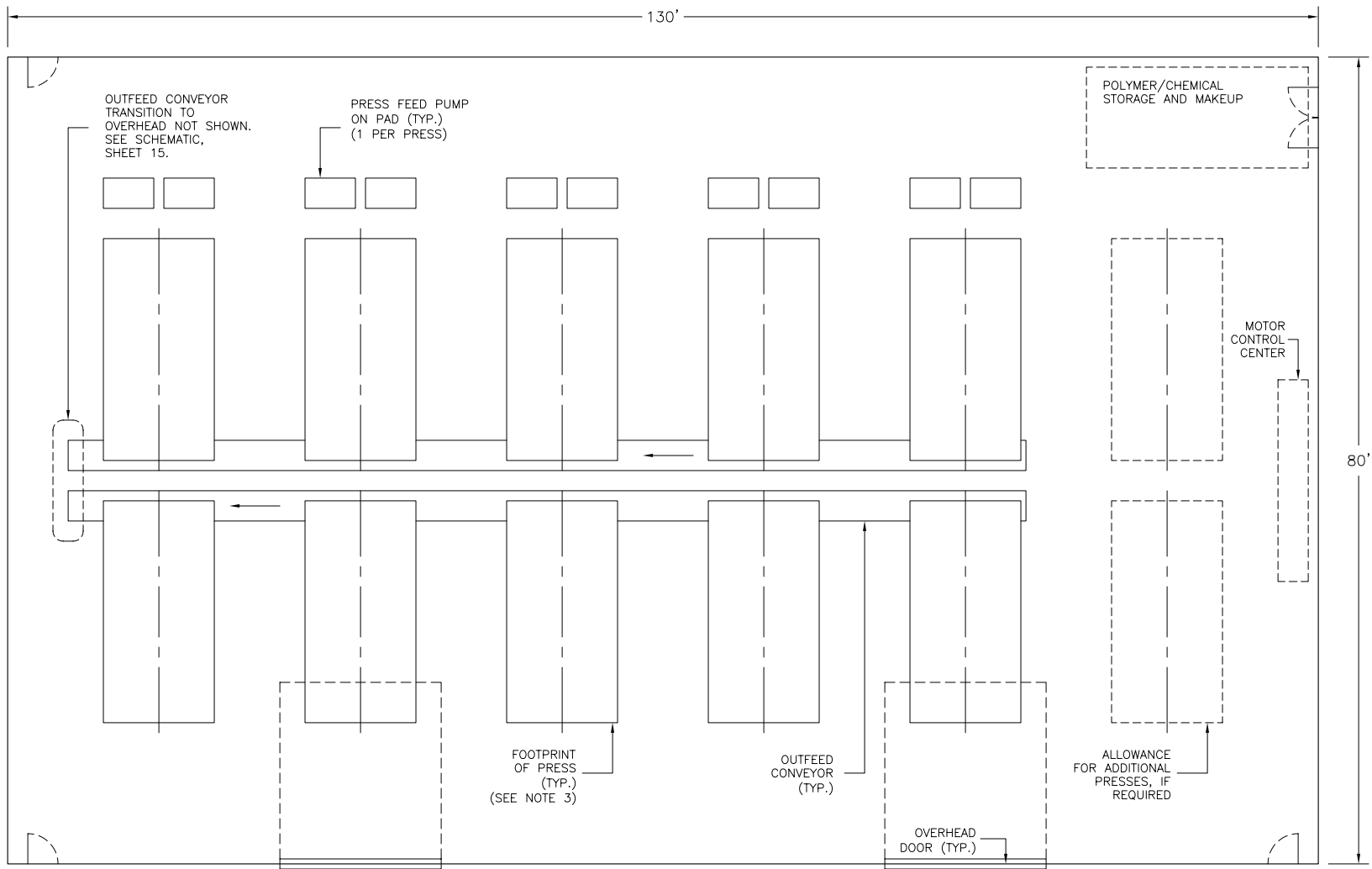


- ENGINEERING CONCEPTS**
1. THIS PLAN INDICATES TYPICAL EQUIPMENT, STRUCTURES AND SUPPORT FACILITIES FOR THE DEWATERING OF DREDGE SLURRY, THE TREATMENT OF DREDGE CARRIAGE WATER AND THE STAGING AND LOADOUT OF FILTER CAKE. IT REPRESENTS A CONCEPT ONLY.
 2. FACILITY AND BUILDING SIZES SHOWN ARE BASED ON THE HIGHEST THROUGHPUT OF DREDGE SLURRY AND SOLIDS. CERTAIN REMEDIAL ALTERNATIVES OR SCENARIOS WOULD REQUIRE ONLY SOME OF THESE COMPONENTS, OR COMPONENTS OF SMALLER SIZE.
 3. THE FACILITY AS ARRANGED IS APPROXIMATELY 11 ACRES. FOR PLANNING PURPOSES, AN ADDITIONAL ALLOWANCE IS INDICATED IN THE EVENT THAT LARGER AREAS ARE NEEDED FOR PROCESSING AND/OR MATERIAL STAGING.

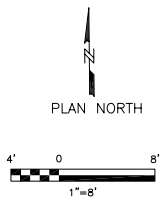


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A	FMS	12/12/02	DRAFT FOR INTERNAL/CLIENT REVIEW	CHKD	DATE	APPVD	DATE
NO	DRWN	DATE	REVISION				

WDNR-FOX RIVER DETAILED EVALUATION OF ALTERNATIVES WISC1-15933-121				FACILITY PLAN, TYPE II - DEWATERING, WASTEWATER TREATMENT AND SOLIDS LOADOUT			
CURRENT DATE	06/26/03			SHEET 12		REVISION	C



PLAN - DEWATERING BUILDING, TYPE II
SEE NOTE 2



- ENGINEERING CONCEPTS**
1. THIS ARRANGEMENT BASED ON PROCESS EQUIPMENT ASSUMPTIONS STATED IN THE DEA REPORT. SIZING OF EQUIPMENT AND FACILITIES IS TYPICAL, AND IS INTENDED TO REPRESENT A GENERAL CONCEPT ONLY.
 2. THIS "TYPE II" FACILITY IS SIZED TO ACCOMMODATE A DREDGE SOLIDS RATE OF 74 TONS/HR FROM A HYBRID DREDGING OPERATION. A SIMILAR "TYPE I" FACILITY FOR A LOWER SLURRY RATE AND LOWER SOLIDS LOADING IS DESCRIBED IN THE DEA REPORT.
 3. FOOTPRINT SHOWN REPRESENTS A 2.8 M BELT PRESS, SIZED FOR 8 DRY TONS SOLIDS PER HOUR, AND USING IN-LINE CHEMICAL ADDITION. OTHER TYPES OR SIZES OF PRESSES MAY BE SELECTED BASED ON FUTURE TREATABILITY WORK AND FINAL ENGINEERING.



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WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
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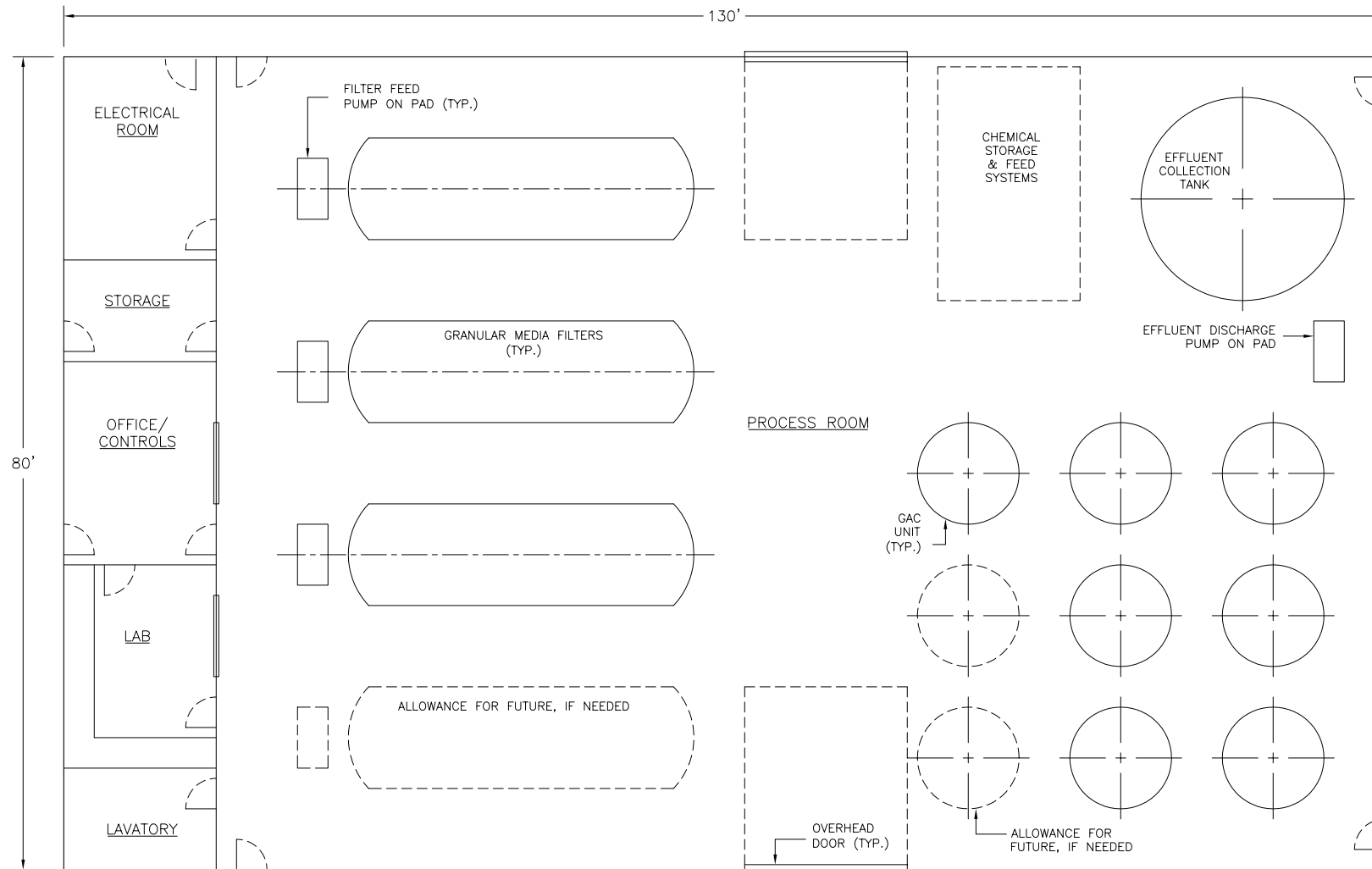
CURRENT DATE 06/26/03

GENERAL ARRANGEMENT -
DEWATERING BUILDING

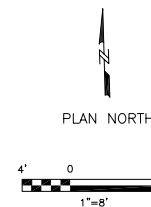
SHEET 13

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PLAN — WASTEWATER TREATMENT BUILDING, TYPE II
SEE NOTE 2



ENGINEERING CONCEPTS

1. THIS ARRANGEMENT BASED ON PROCESS EQUIPMENT ASSUMPTIONS STATED IN THE DEA REPORT. SIZING OF EQUIPMENT AND FACILITIES IS TYPICAL, AND IS INTENDED TO REPRESENT A GENERAL CONCEPT ONLY.
2. THIS "TYPE II" FACILITY IS SIZED TO TREAT THE CARRIAGE WATER FROM A DREDGE SLURRY FLOWRATE OF UP TO 4100 GPM. A SIMILAR "TYPE I" FACILITY FOR A LOWER SLURRY FLOWRATE IS DESCRIBED IN THE DEA REPORT.



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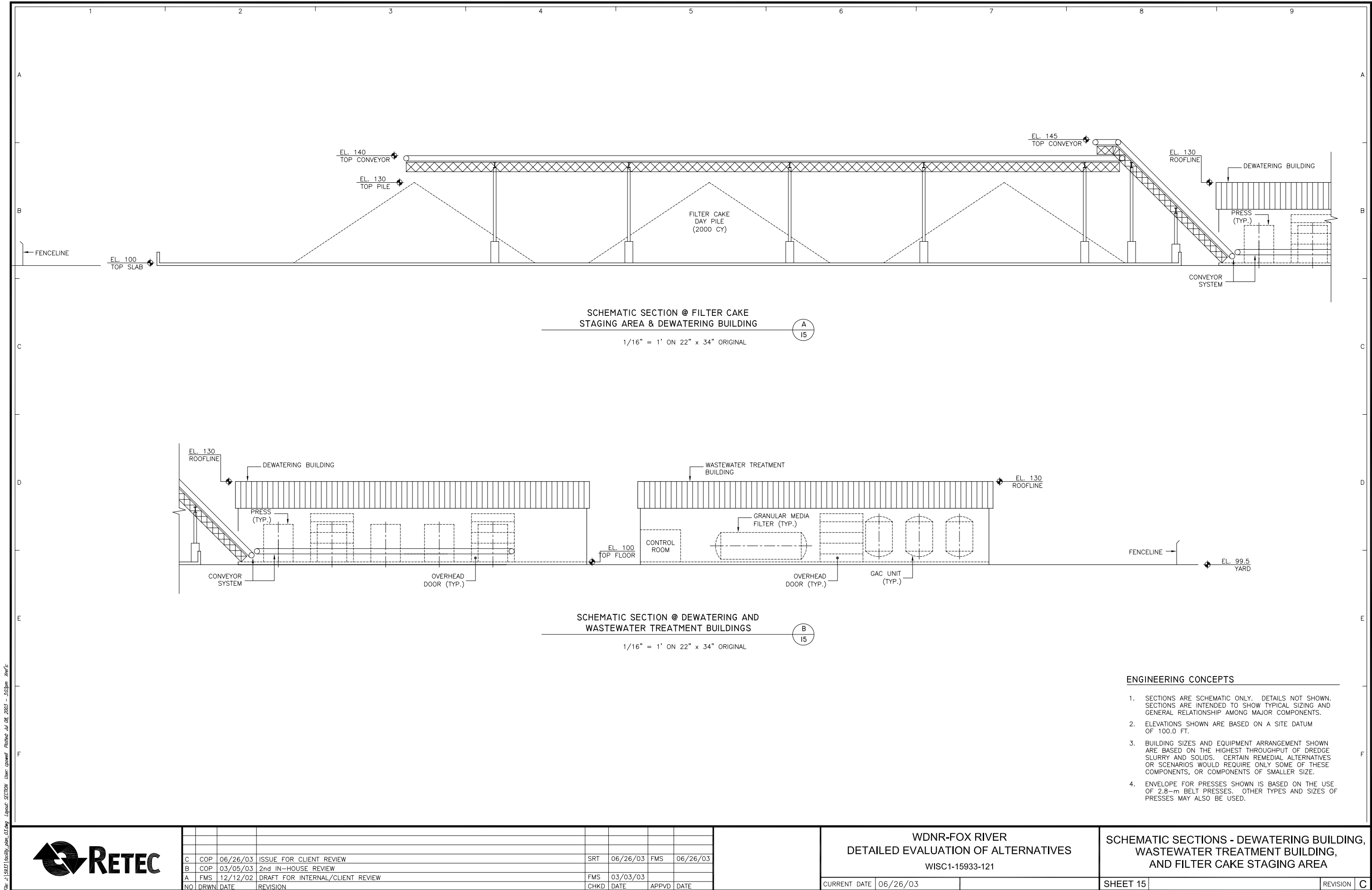
WDNR-FOX RIVER
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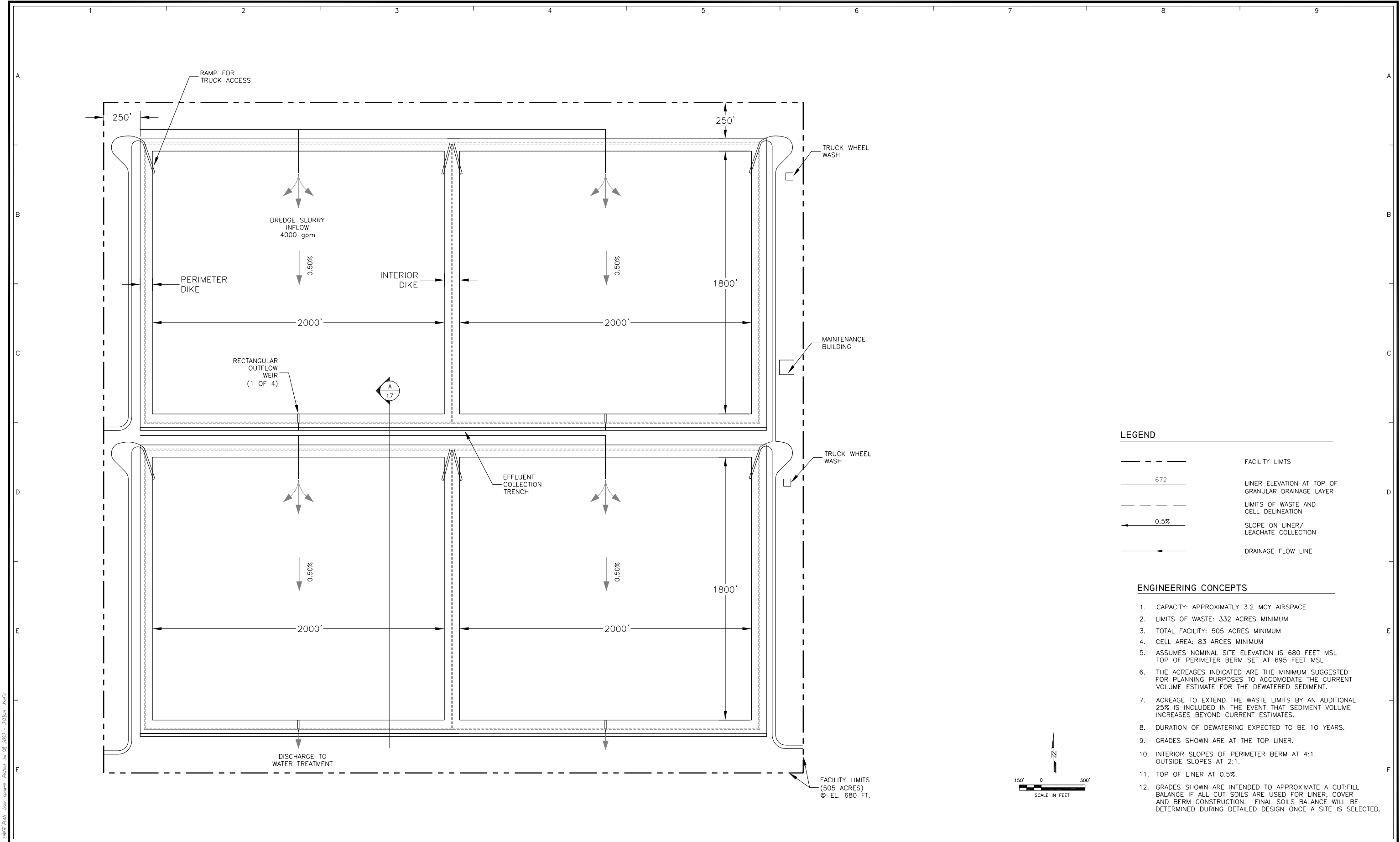
GENERAL ARRANGEMENT - WASTEWATER
TREATMENT BUILDING

SHEET 14

REVISION C



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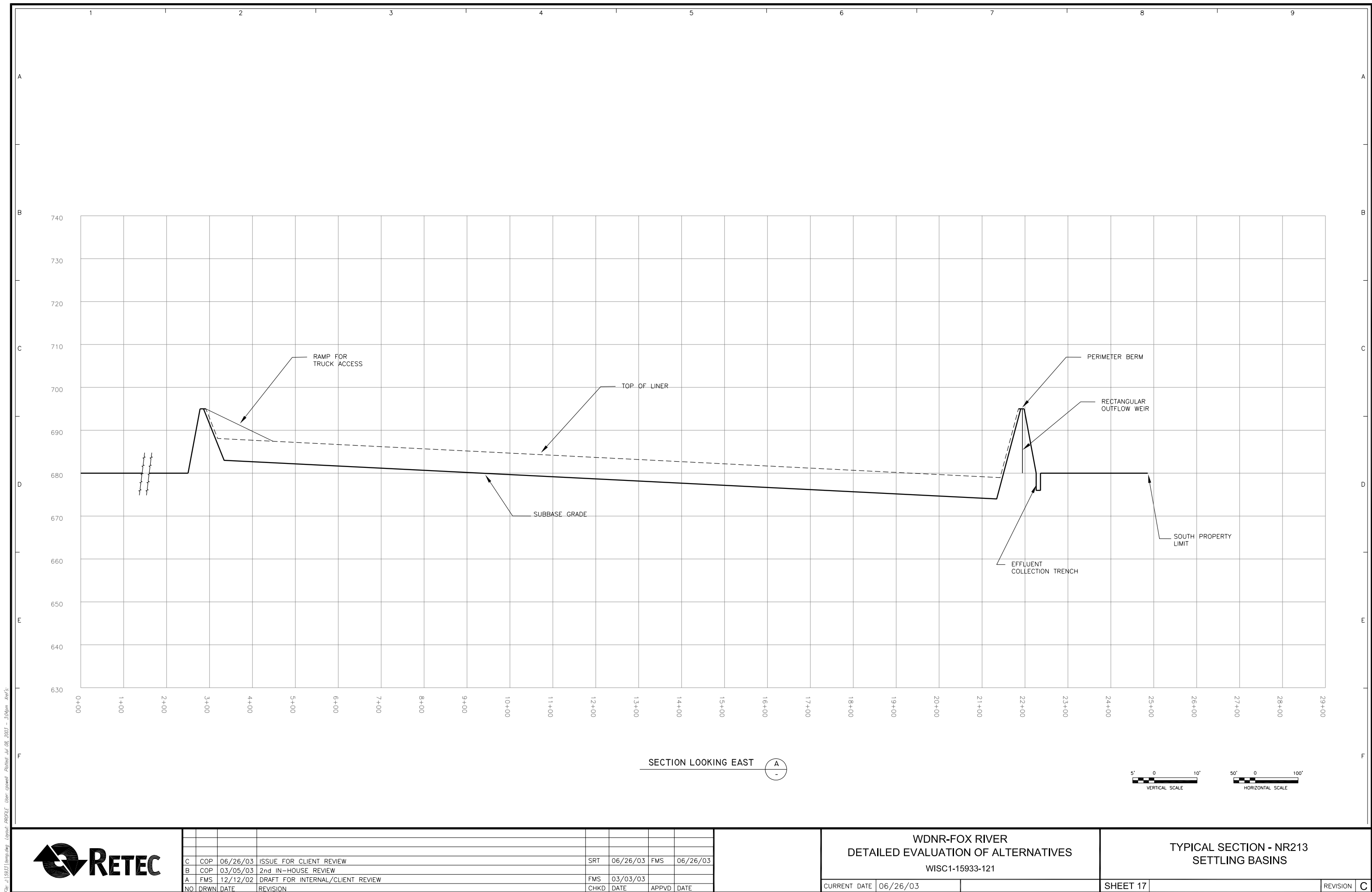
WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

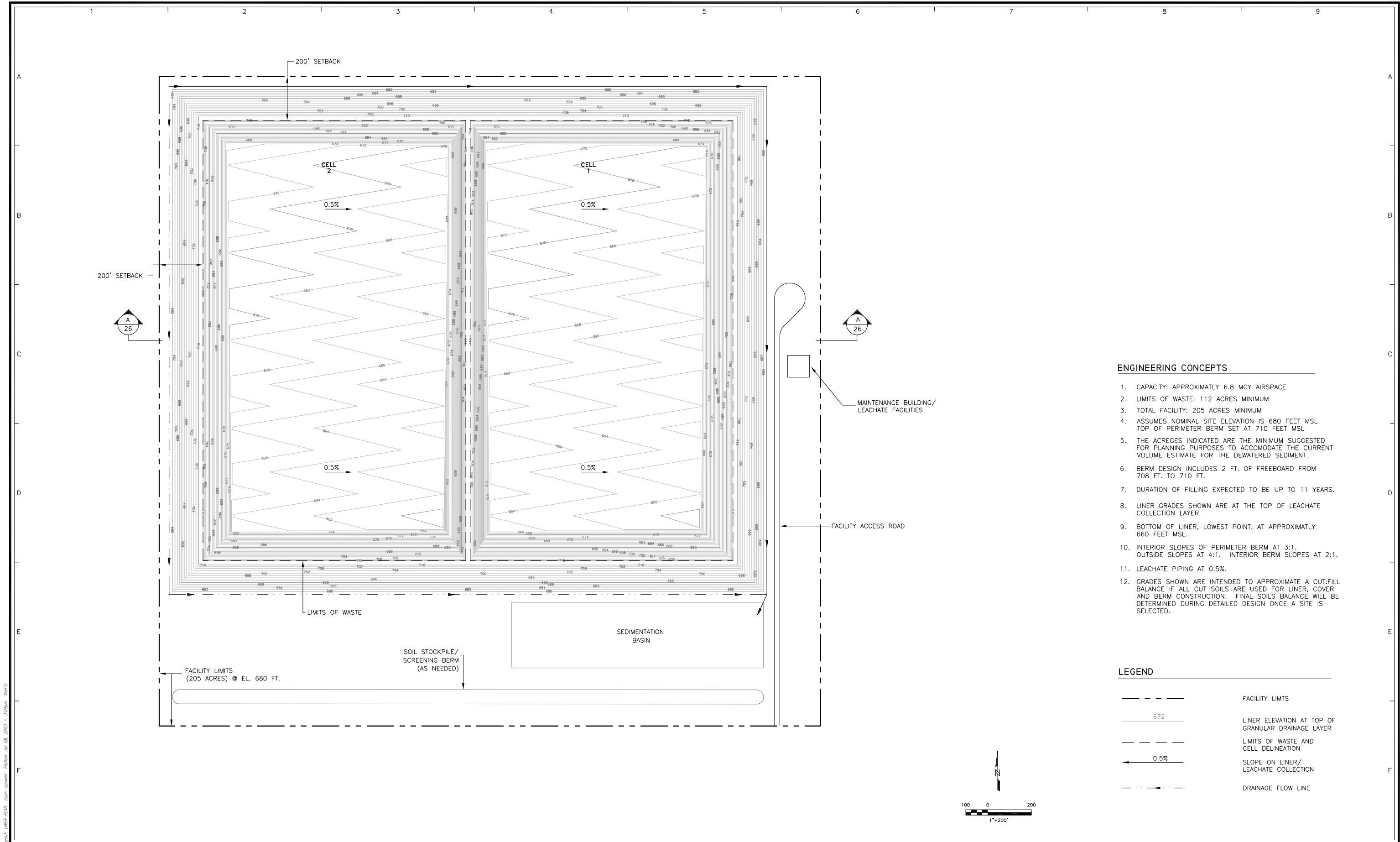
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LINER PLAN - NR213
SETTLING BASINS

SHEET 16

REVISION C





ENGINEERING CONCEPTS

1. CAPACITY: APPROXIMATELY 6.8 MCY AIRSPACE
2. LIMITS OF WASTE: 112 ACRES MINIMUM
3. TOTAL FACILITY: 205 ACRES MINIMUM
4. ASSUMES NOMINAL SITE ELEVATION IS 680 FEET MSL
TOP OF PERIMETER BERM SET AT 710 FEET MSL
5. THE ACREGES INDICATED ARE THE MINIMUM SUGGESTED
FOR PLANNING PURPOSES TO ACCOMMODATE THE CURRENT
VOLUME ESTIMATE FOR THE DEWATERED SEDIMENT.
6. BERM DESIGN INCLUDES 2 FT. OF FREEBOARD FROM
708 FT. TO 710 FT.
7. DURATION OF FILLING EXPECTED TO BE UP TO 11 YEARS.
8. LINER GRADES SHOWN ARE AT THE TOP OF LEACHATE
COLLECTION LAYER.
9. BOTTOM OF LINER, LOWEST POINT, AT APPROXIMATELY
660 FEET MSL.
10. INTERIOR SLOPES OF PERIMETER BERM AT 3:1.
OUTSIDE SLOPES AT 4:1. INTERIOR BERM SLOPES AT 2:1.
11. LEACHATE PIPING AT 0.5%.
12. GRADES SHOWN ARE INTENDED TO APPROXIMATE A CUT/FILL
BALANCE IF ALL CUT SOILS ARE USED FOR LINER, COVER
AND BERM CONSTRUCTION. FINAL SOILS BALANCE WILL BE
DETERMINED DURING DETAILED DESIGN ONCE A SITE IS
SELECTED.

LEGEND

- FACILITY LIMITS
- LINER ELEVATION AT TOP OF
GRANULAR DRAINAGE LAYER
- LIMITS OF WASTE AND
CELL DELINEATION
- SLOPE ON LINER/
LEACHATE COLLECTION
- DRAINAGE FLOW LINE



C	COP	06/26/03	ISSUE FOR CLIENT REVIEW	SRT	06/26/03	FMS	06/26/03
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WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
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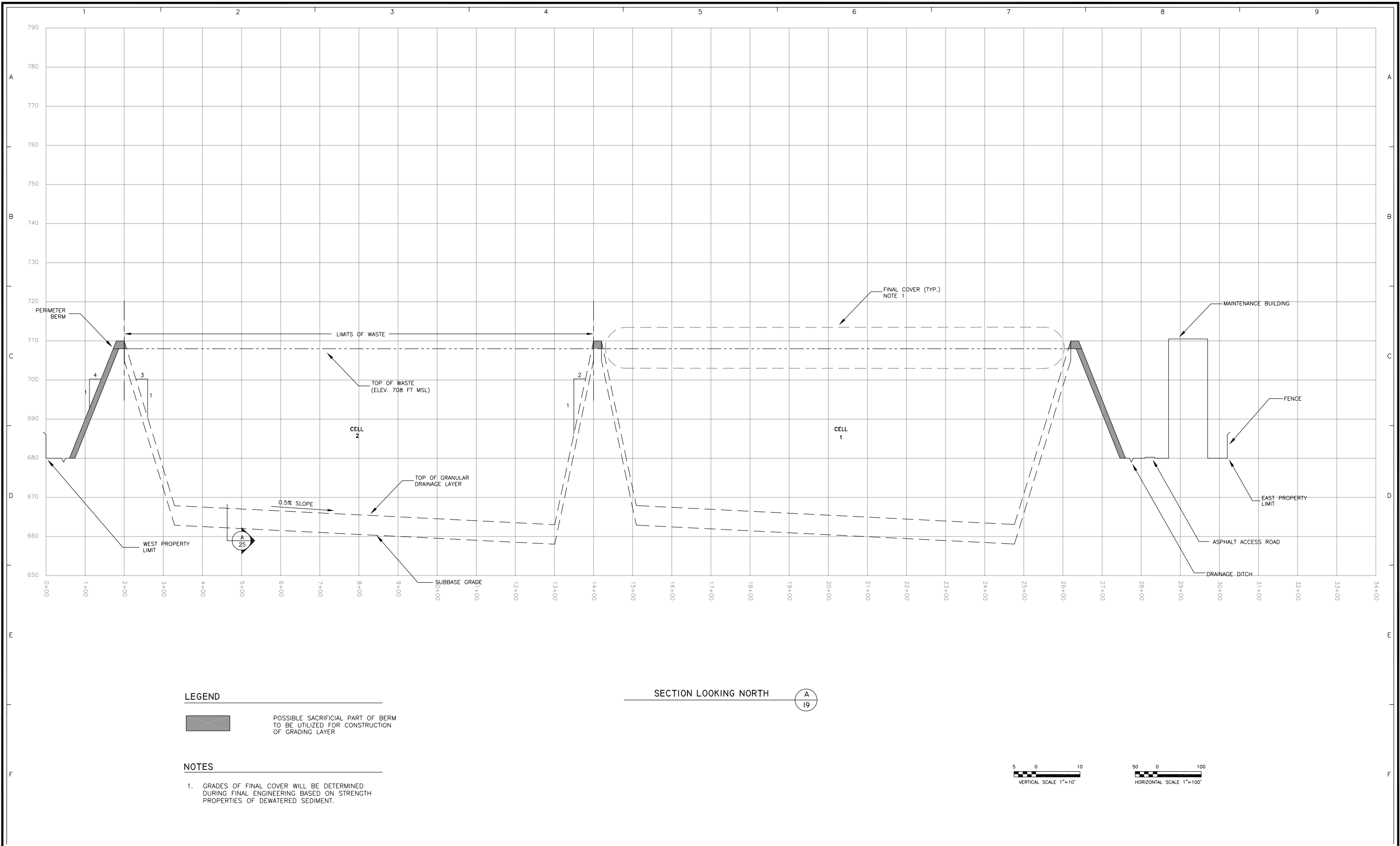
LINER PLAN - NR500
MONOFILL, TYPE A, FOR OU3 and OU4
PASSIVELY DEWATERED SEDIMENT

SHEET 18

REVISION C

File: A:\0321\Monofill_Liner_Plan.dwg User: cpowell Plot: 06/26/03 1:34pm 18x11

File: J:\1913\Monofill 3.dwg Layout: PROFILE User: cpowell PlotDate: Jul 08, 2003 - 3:06pm Ref's:



C	COP	06/26/03	ISSUE FOR CLIENT REVIEW	SRT	06/26/03	FMS	06/26/03
A	CDM	03/25/03	DRAFT FOR INTERNAL/CLIENT REVIEW	FMS	03/26/03		
NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE

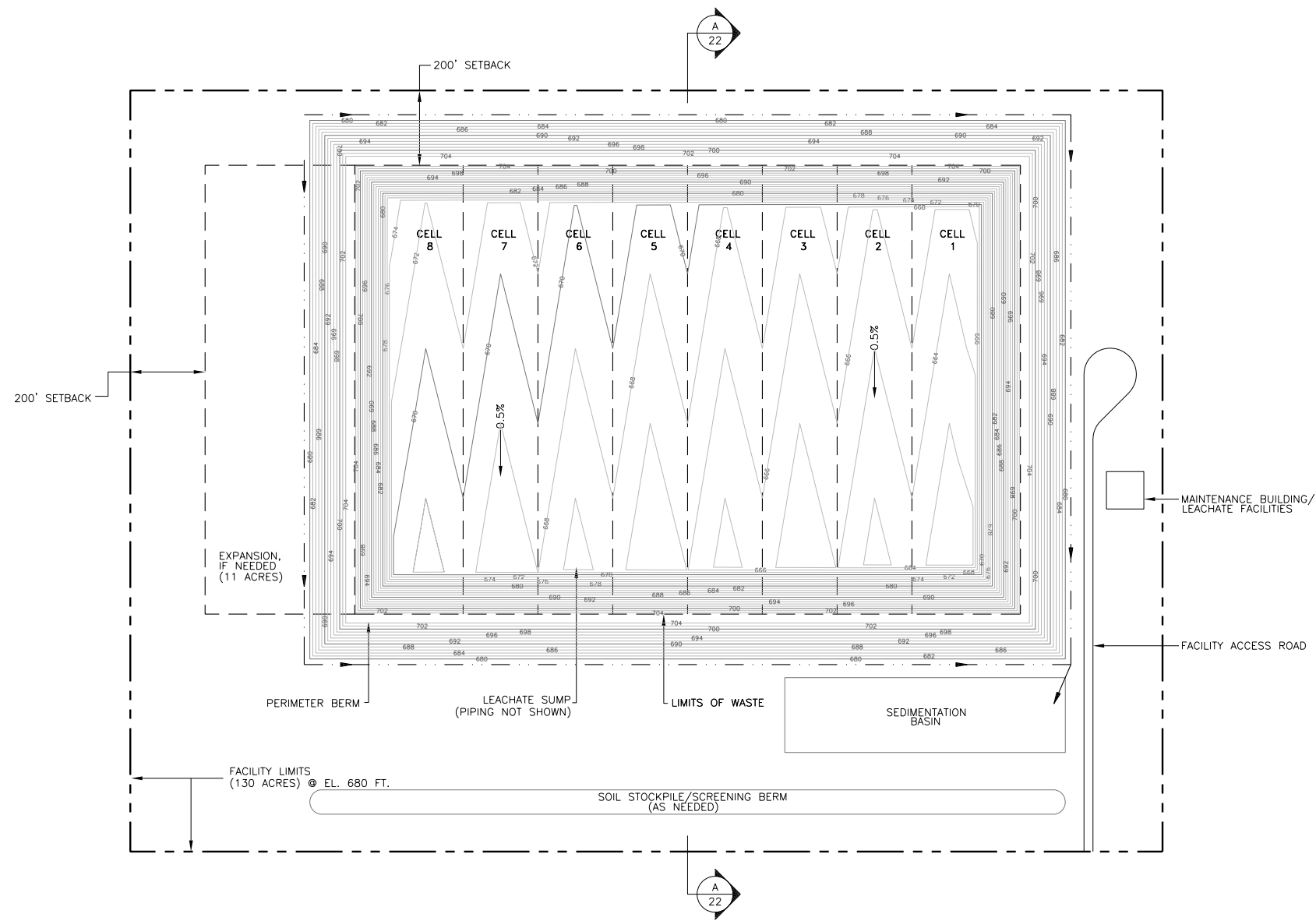
WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

CURRENT DATE 03-25-03

TYPICAL SECTION - NR500
MONOFILL, TYPE A, FOR OU3 and OU4
PASSIVELY DEWATERED SEDIMENT

SHEET 19

REVISION C

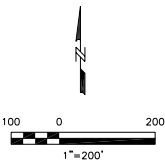


ENGINEERING CONCEPTS

1. CAPACITY: APPROXIMATELY 4.2 MCY AIRSPACE
2. LIMITS OF WASTE: 49 ACRES MINIMUM
3. TOTAL FACILITY: 130 ACRES MINIMUM
4. ASSUMES NOMINAL SITE ELEVATION IS 680 FEET MSL
TOP OF PERIMETER BERM SET AT 705 FEET MSL
5. THE ACREGES INDICATED ARE THE MINIMUM SUGGESTED
FOR PLANNING PURPOSES TO ACCOMMODATE THE CURRENT
VOLUME ESTIMATE FOR THE DEWATERED SEDIMENT.
6. ACREGE TO EXTEND THE WASTE LIMITS BY AN ADDITIONAL
25% IS INCLUDED IN THE EVENT THAT SEDIMENT VOLUME
INCREASES BEYOND CURRENT ESTIMATES.
7. DURATION OF FILLING EXPECTED TO BE 8 TO 10 YEARS.
LINER CONSTRUCTED OVER MULTIPLE PHASES CONSISTING
OF 1 OR 2 CELLS EACH.
8. LINER GRADES SHOWN ARE AT THE TOP OF LEACHATE
COLLECTION LAYER.
9. BOTTOM OF LINER, LOWEST POINT, AT APPROXIMATELY
662 FEET MSL.
10. INTERIOR SLOPES OF PERIMETER BERM AT 3:1.
OUTSIDE SLOPES AT 4:1.
11. LEACHATE PIPING AT 0.5%.
12. GRADES SHOWN ARE INTENDED TO APPROXIMATE A CUT/FILL
BALANCE IF ALL CUT SOILS ARE USED FOR LINER, COVER
AND BERM CONSTRUCTION. FINAL SOILS BALANCE WILL BE
DETERMINED DURING DETAILED DESIGN ONCE A SITE IS SELECTED.

LEGEND

- FACILITY LIMITS
- 672 LINER ELEVATION AT TOP OF
GRANULAR DRAINAGE LAYER
- LIMITS OF WASTE AND
CELL DELINEATION
- 0.5% SLOPE ON LINER/
LEACHATE COLLECTION
- DRAINAGE FLOW LINE



C	COP	06/26/03	ISSUE FOR CLIENT REVIEW	SRT	06/26/03	FMS	06/26/03
B	COP	03/05/03	2nd IN-HOUSE REVIEW				
A	FMS	12/12/02	DRAFT FOR INTERNAL/CLIENT REVIEW	FMS	03/03/03		
NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE

WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

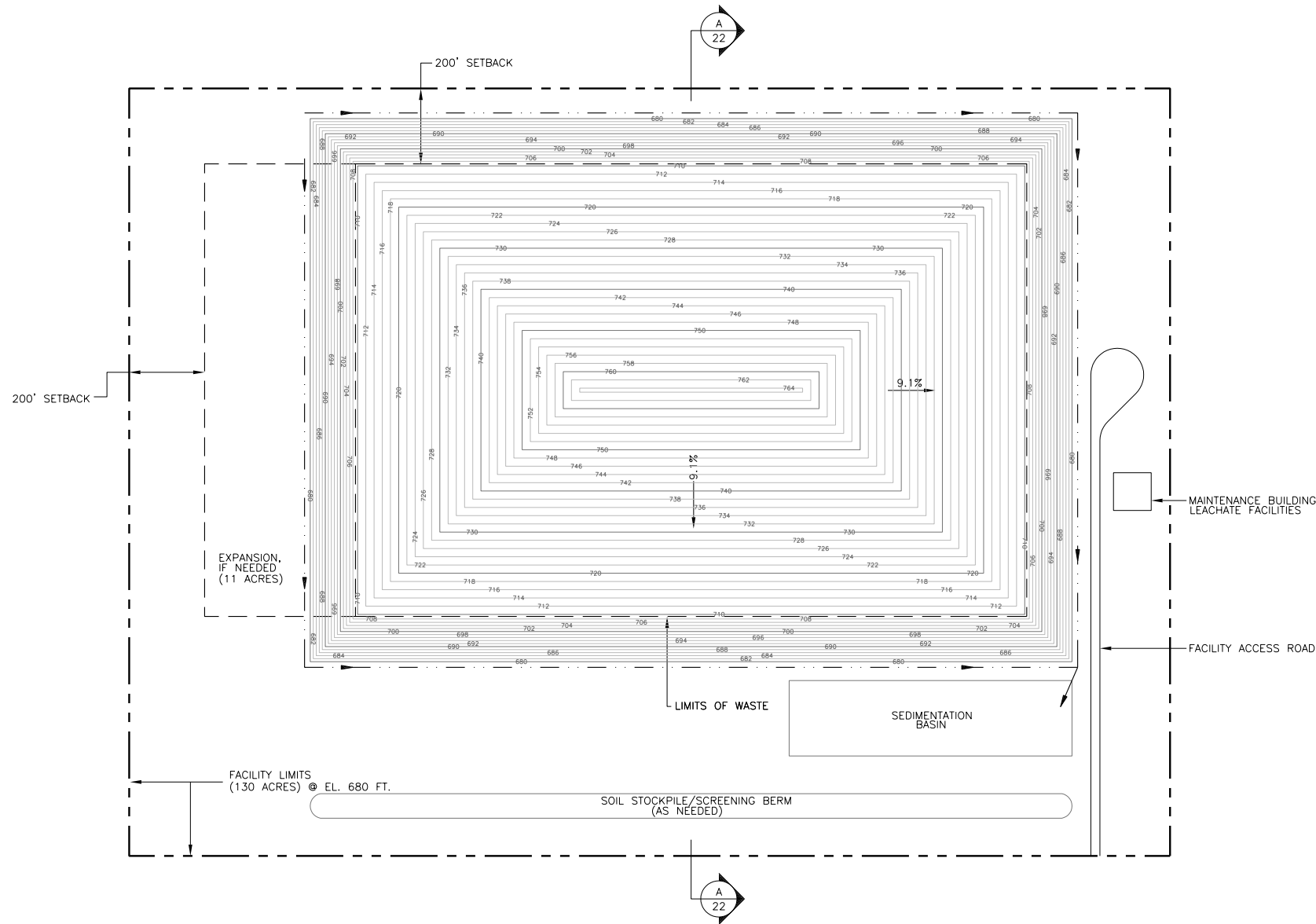
CURRENT DATE 06/26/03

LINER PLAN - NR500
MONOFILL, TYPE B, FOR OU3 and OU4
MECHANICALLY DEWATERED SEDIMENT

SHEET 20

REVISION C

File: J:\19331\monofill\eng Layout - FINAL GRADE PLAN User: cawell Plotted: Jul 08, 2003 - 3:07pm 11x17's



ENGINEERING CONCEPTS

1. CAPACITY: APPROXIMATELY 4.2 MCY AIRSPACE
2. LIMITS OF WASTE: 49 ACRES MINIMUM
3. TOTAL FACILITY: 130 ACRES MINIMUM
4. ASSUMES NOMINAL SITE ELEVATION IS 680 FEET MSL
TOP OF PERIMETER BERM SET AT 705 FEET MSL
5. ACRE TO EXTEND THE WASTE LIMITS BY AN ADDITIONAL
25% IS INCLUDED IN THE EVENT THAT SEDIMENT VOLUME
INCREASES BEYOND CURRENT ESTIMATES.
6. GRADES SHOWN ARE TOP OF COVER FILL. MAXIMUM
WASTE HEIGHT AT APPROXIMATELY 765 FEET MSL. HEIGHT
ABOVE SURROUNDING GROUND = APPROXIMATELY 85 FEET.
7. HEIGHT OF FILL COULD BE LOWERED IF LIMITS OF WASTE ARE
INCREASED (I.E. BY OBTAINING ADDITIONAL ACREAGE)

LEGEND

---	FACILITY LIMITS
672	LINER ELEVATION AT TOP OF GRANULAR DRAINAGE LAYER
---	LIMITS OF WASTE AND CELL DELINEATION
9.1%	SLOPE ON FINAL COVER
---	DRAINAGE FLOW LINE



C	COP	06/26/03	ISSUE FOR CLIENT REVIEW	SRT	06/26/03	FMS	06/26/03
B	COP	03/05/03	2nd IN-HOUSE REVIEW				
A	FMS	12/12/02	DRAFT FOR INTERNAL/CLIENT REVIEW	FMS	03/03/03		
NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE

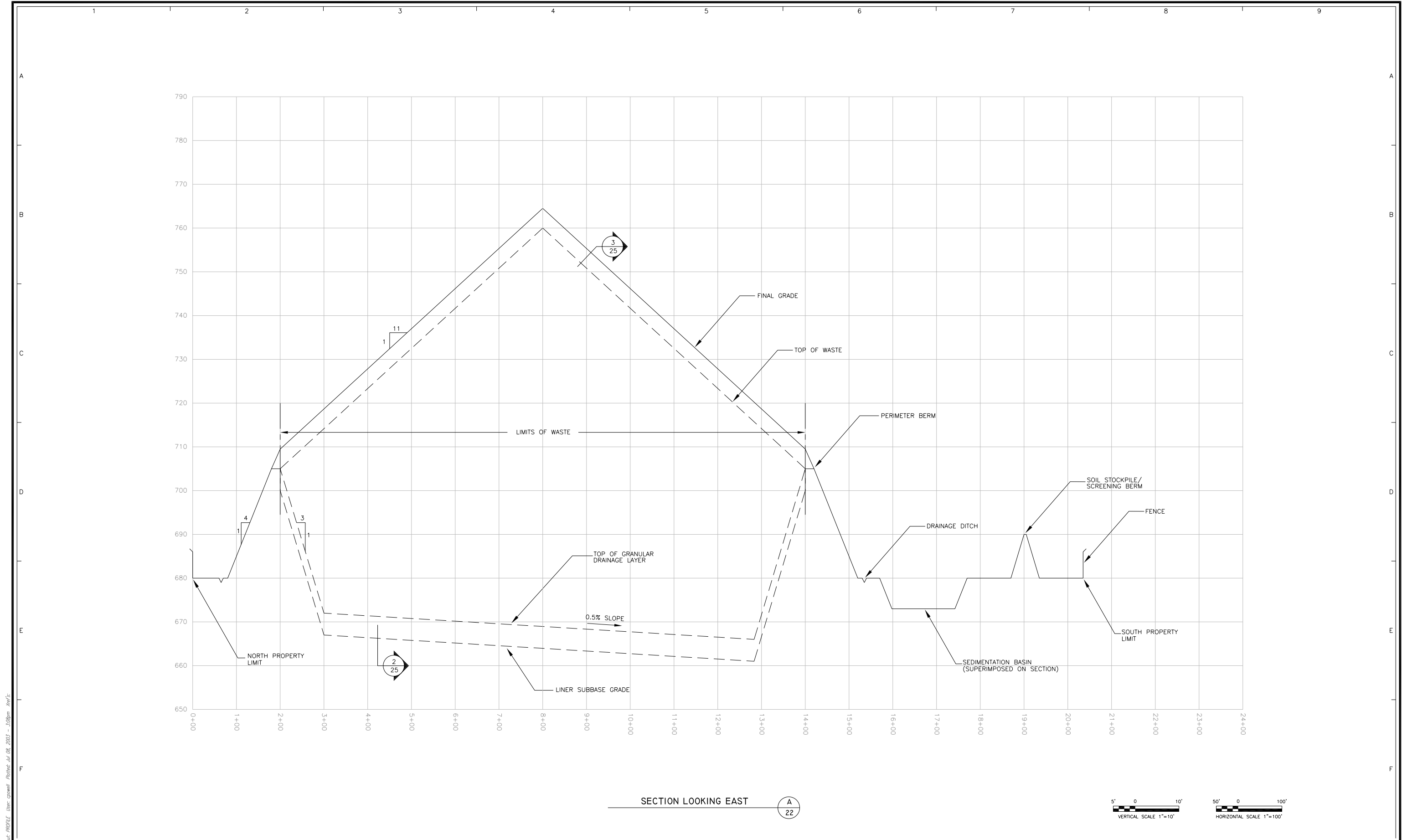
WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

CURRENT DATE 06/26/03

FINAL GRADES PLAN - NR500
MONOFILL, TYPE B, FOR OU3 and OU4
MECHANICALLY DEWATERED SEDIMENT

SHEET 21

REVISION C



File: J:\19131\monofilling Layout: PROFILE User: cgmwll Date: Jul 08, 2003 3:58pm Ref's:



C	COP	06/26/03	ISSUE FOR CLIENT REVIEW	SRT	06/26/03	FMS	06/26/03
B	COP	03/05/03	2nd IN-HOUSE REVIEW				
A	FMS	12/12/02	DRAFT FOR INTERNAL/CLIENT REVIEW	FMS	03/03/03		
NQ	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE

WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

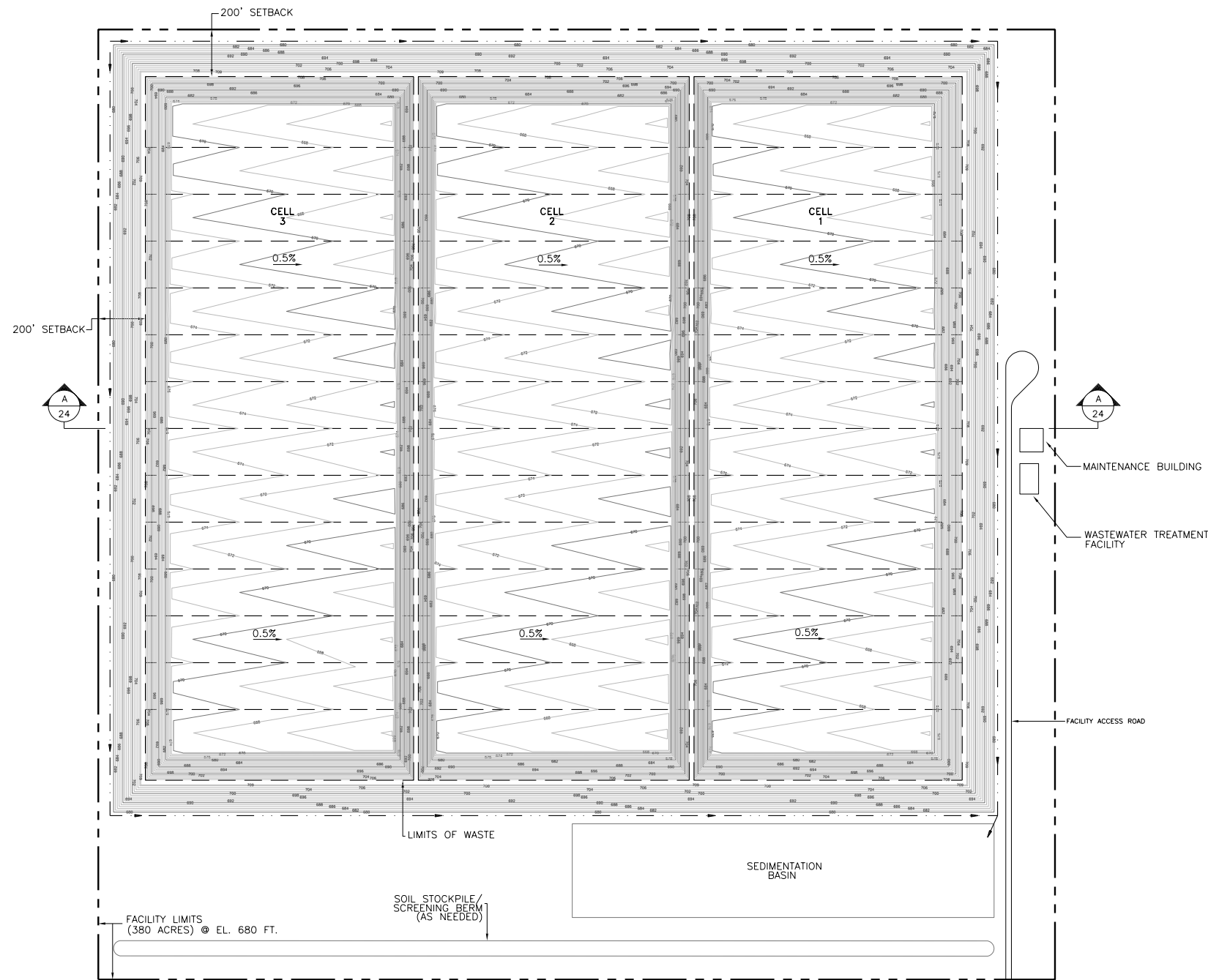
TYPICAL SECTION - NR500
MONOFILL, TYPE B, FOR OU3 and OU4
MECHANICALLY DEWATERED SEDIMENT

CURRENT DATE 06-26-03

SHEET 22

REVISION C

File: J:\5913\CDP.dwg Layout: LINER PLAN User: cpoymell Plot: Jul 08, 2003 - 10:08am 11x17" s



ENGINEERING CONCEPTS

1. CAPACITY: APPROXIMATELY 11.3 MCY AIRSPACE
2. LIMITS OF WASTE: 237 ACRES MINIMUM
3. TOTAL FACILITY: 380 ACRES MINIMUM
4. ASSUMES NOMINAL SITE ELEVATION IS 680 FEET MSL TOP OF PERIMETER BERM SET AT 709 FEET MSL
5. THE ACREAGES INDICATED ARE THE MINIMUM SUGGESTED FOR PLANNING PURPOSES TO ACCOMMODATE THE CURRENT VOLUME ESTIMATE FOR THE DEWATERING SEDIMENT.
6. LINER DESIGN INCLUDES 5 FT. OF FREEBOARD FROM 704 FT. TO 709 FT.
7. DURATION OF FILLING EXPECTED TO BE 8 TO 10 YEARS. LINER CONSTRUCTED OVER MULTIPLE PHASES CONSISTING OF 1 OR 2 CELLS EACH.
8. LINER GRADES SHOWN ARE AT THE TOP OF LEACHATE COLLECTION LAYER.
9. BOTTOM OF LINER, LOWEST POINT, AT APPROXIMATELY 664 FEET MSL.
10. INTERIOR SLOPES OF PERIMETER BERM AT 3:1. OUTSIDE SLOPES AT 4:1. INTERIOR BERM SLOPES AT 2:1.
11. LEACHATE PIPING AT 0.5%.
12. GRADES SHOWN ARE INTENDED TO APPROXIMATE A CUT/FILL BALANCE IF ALL CUT SOILS ARE USED FOR LINER, COVER AND BERM CONSTRUCTION. FINAL SOILS BALANCE DESIGN WILL BE DETERMINED DURING DETAILED DESIGN ONCE A SITE IS SELECTED.

LEGEND

---	FACILITY LIMITS
672	LINER ELEVATION AT TOP OF GRANULAR DRAINAGE LAYER
---	LIMITS OF WASTE AND CELL DELINEATION
0.5%	SLOPE ON LINER/LEACHATE COLLECTION
---	DRAINAGE FLOW LINE



C	COP	06/26/03	ISSUE FOR CLIENT REVIEW	SRT	06/26/03	FMS	06/26/03
B	COP	03/05/03	2nd IN-HOUSE REVIEW				
A	FMS	12/12/02	DRAFT FOR INTERNAL/CLIENT REVIEW	FMS	03/03/03		
NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE

WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

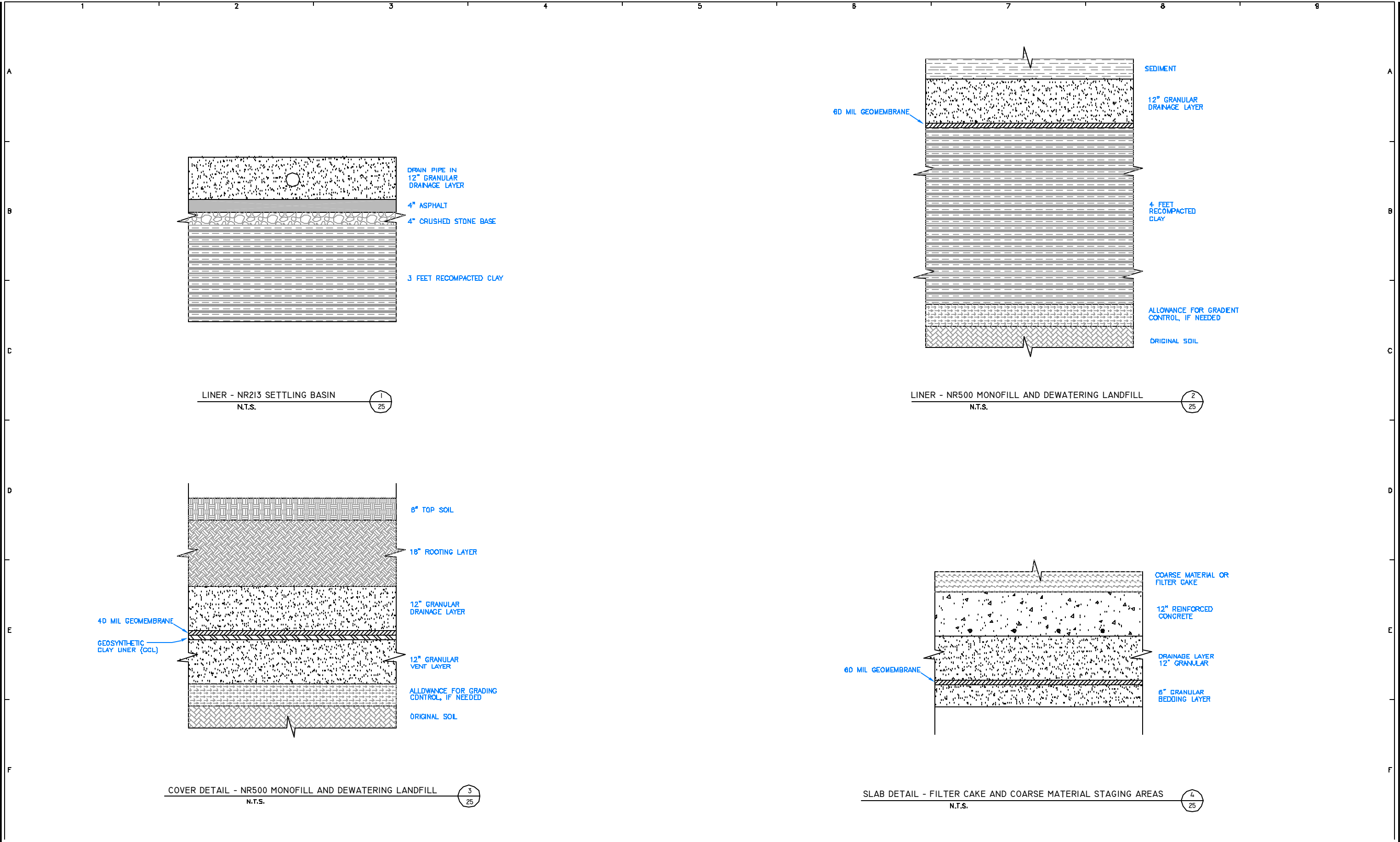
CURRENT DATE 06/26/03

LINER PLAN - NR500
DEWATERING LANDFILL FOR
OU3 and OU4

SHEET 23

REVISION C

File: C:\2013\20130101\20130101.dwg, Project: 20130101, User: c:\users\jerry\appdata\local\temp\jerry, Date: 12/24/2013, Time: 10:00:00 AM, Plot: 12/24/2013, Time: 10:00:00 AM, Plot: 12/24/2013, Time: 10:00:00 AM



D	COP	10/30/03	FINAL	SRT	10/30/03	FMS	10/30/03
C	COP	06/26/03	ISSUE FOR CLIENT REVIEW	SRT	06/26/03	FMS	06/26/03
B	COP	03/05/03	2nd IN-HOUSE REVIEW				
A	FMS	12/12/02	DRAFT FOR INTERNAL/CLIENT REVIEW	FMS	03/03/03		
NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE

WDNR-FOX RIVER
DETAILED EVALUATION OF ALTERNATIVES
WISC1-15933-121

TYPICAL DETAILS - LAND BASED FACILITIES

CURRENT DATE 06/26/03

SHEET 25

REVISION D